



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/759,697	01/12/2001	Robert H. Halstead, JR.	09612.1028-01000	2648

22852 7590 12/08/2006

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER

STEELMAN, MARY J

ART UNIT	PAPER NUMBER
----------	--------------

2191

DATE MAILED: 12/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/759,697

Applicant(s)

HALSTEAD, ET AL.

Examiner

Mary J. Steelman

Art Unit

2191

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27, 29 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27, 29, 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to Remarks and Amendments received 09/20/2006. Per Applicant's request, claims 1, 5, 13, 23, 25, and 26 are amended. Claim 28 is previously cancelled. New claims 29 & 30 have been added. Claims 1-27, 29 and 30 are pending.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Art Unit: 2191

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-27, 29, and 30 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-25 of copending Application No. 09 / 760031. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to substantially the same invention of defining an object with an option data structure which supports references to option values without preallocation of memory space.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 13-24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. In view of the current guidelines, Claim 13 is a system claim, that embodies software, without reciting hardware, which is non-statutory. Claim 13 may be amended to include memory and a processor, as supported in the Specification, page 38:14, thereby including the hardware to implement the software.

Response to Arguments

5. Applicant has argued, in substance, the following:

(A) Applicant has argued (page 12: 2nd paragraph) Nelson does not disclose a imperative, object oriented language.

Examiner disagrees. See discussion below as related to objects and classes.

(B) Applicant has argued (page 12: 2nd paragraph), "Nelson fails to disclose 'compiling an operation on an option value in an instance of the class using the type description in the option data structure.'"

Examiner disagrees. See discussion below. The Specification fails to explicitly disclose that 'compiling' is the process by which a compiler translates program code into machine language, or object code. The Specification at page 11, shows the program 'compiling' by getting and setting an appropriate value, to change the application. Nelson performs a similar operation.

New art has been added to further support rejection of amended limitations.

More explicitly, Badavas disclosed (col. 4:37-43), PCOs (Process Control Objects), with mandatory parts for which memory space is allocated at the time of object creation (or instantiation) and with optional parts for which memory space is allocated only as needed (supports an option data structure, without allocation of memory space for the full option values when the instance is created). The optional parts can be added subsequent to creation, typically, for example, during configuration.

Art Unit: 2191

(C) Applicant has argued (page 13, 2nd paragraph), “Nowhere in Nelson does it demonstrate that an instance of the form specification class has ‘references to option values without allocation of memory space for the full option values when the instance is created.’”

Examiner disagrees. Nelson disclosed selecting widgets for the form. Only desired widgets are chosen (option values without allocation of memory space for the full option values). Col. 5, line 48-49, “generates the necessary Factory objects and Form specification classes (defining a class).” Col. 5, lines 39-41, “Then the form section (option data structure) is created grouping and identifying the various widgets (without allocation of memory space for the full option values, only selected widgets are references). Col. 4, lines 61-67, “The form engine 19 then collects the corresponding data and reads any layout information from the corresponding FDL file...The dynamic form 1 is then presented...” Col. 8, lines 13-15, “The Dynamic Forms tool has the unique ability to automatically select a widget type (type description) based on the characteristics of the data item being displayed by the widget (the selected option value).” Col. 7, 14-31, “The process of dynamically creating both a dynamic form and a Data Collection at run-time based on a form description is complex...The design of dynamic forms isolates the object creation functions within ‘factory’ objects using the abstract factory pattern description...These factory objects do nothing more than create instances of specific types of objects, such as a Windows Combo Box widget (option value). The factory objects are controlled by ‘factory manager’ or builder objects, the (builder) objects are responsible for interpreting the data from the form description, and invoking the factory objects to create the appropriate objects.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-27, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,999,948 to Nelson et al., in view of USPN 6,510,352 B1 to Badavas et al.

Per claims 1, 13, 25, and 26:

A method of processing data (A data processing system), using an object oriented programming language, comprising:

Nelson: Col. 5: 6-9, "Upon registration, the file is parsed in software 'specification' objects (an object oriented programming language) containing the data from the file and are added to the internal catalogue of compiled for descriptions." Col. 5, lines 47-49, "The Dynamic Forms engine parses the grammar in the FDL file and generates the necessary Factory objects and Form specification classes." (note objects and classes as used in an object oriented programming language)

Art Unit: 2191

-defining a class which supports an option data structure having, in instances of the class, references to option values without allocation of memory space for the full option values when the instance is created, the option data structure including a type description of the option values;

Nelson: Col. 5, line 48-49, "generates the necessary Factory objects and Form specification classes (defining a class)." Col. 5, lines 39-41, "Then the form section (option data structure) is created grouping and identifying the various widgets (without allocation of memory space for the full option values, only selected widgets are references). Col. 4, lines 61-67, "The form engine 19 then collects the corresponding data and reads any layout information from the corresponding FDL file...The dynamic form 1 is then presented..." Col. 8, lines 13-15, "The Dynamic Forms tool has the unique ability to automatically select a widget type (type description) based on the characteristics of the data item being displayed by the widget (the selected option value)."

Col. 7, 14-31, "The process of dynamically creating both a dynamic form and a Data Collection at run-time based on a form description is complex...The design of dynamic forms isolates the object creation functions within 'factory' objects using the abstract factory pattern description...These factory objects do nothing more than create instances of specific types of objects, such as a Windows Combo Box widget (option value). The factory objects are controlled by 'factory manager' or builder objects, the (builder) objects are responsible for interpreting the data from the form description, and invoking the factory objects to create the appropriate objects.

Art Unit: 2191

-compiling an operation on an option value in an instance of the class using the type description in the option data structure.

Nelson: Col. 12, lines 61-67, "During the exchange, the DataItem for each widget is looked up in the DataCollection and the appropriate read/write function is executed. A read gets data (get() operation compiled on / changes an option value in an instance of the class) from the DataItem and places it in the widget (class instance of an option value, using the type description in the option data structure) and a write sets data from the widget into the DataItem. The DataItems maintain all the necessary information for each particular piece of data. DataItems maintain type information (using the type description)..." Nelson discloses 'compiling an operation on an option value', in a manner similar to that disclosed in the Specification, page 11, by using a get() operation and set() operation, to retrieve and incorporate an optional value.

Nelson disclosed, col. 13, lines 38-47, "Transformations (compiling) or scaling functions are used to change the displayed value of a data retrieved from a DataItem. These functions can be used to add offsets, divide by constants, perform string substitutions, etc..."

More explicitly, Badavas disclosed (col. 4:37-43), PCOs (Process Control Objects), with mandatory parts for which memory space is allocated at the time of object creation (or instantiation) and with optional parts for which memory space is allocated only as needed (supports an option data structure, without allocation of memory space for the full option values when the instance is created). The optional parts can be added subsequent to creation, typically, for example, during configuration.

Art Unit: 2191

Badavas disclosed (col. 2:40) a virtual machine environment with JAVA objects (object oriented programming language), referred to as process control objects (PCOs). Col. 4:44-65, PCO can have a mandatory input/output part, instantiated when the PCO is first instantiated. Optional parts for the PCO can be instantiated, if at all, e.g., when the already instantiated PCO is being configured. Memory resources are minimized (col. 11:1)

Therefore, it would have been obvious, to one of ordinary skill in the art, to modify Nelson, using the teachings of Badavas, because Badavas was concerned with (col. 1:15-16) implementing systems with greater flexibility and robustness. Badavas understood that (col. 5:15) this would prevent consuming resources with optional features that would not be used. Likewise, Nelson recognized that his invention makes it (col.3: 1-15) easy to upgrade the application to include new forms to support updated, new versions (flexibility and robustness). One of ordinary skill would be motivated to provide a flexible system that conserved memory resources..

Per claims 2 and 14 :

-the option data structure identifies change handler code that is executed when an option value changes.

Nelson: See FIGs. 3A and 3B. The value of the widget is changed, #25 & #29. Related text found at col. 5, lines 15-23.

Art Unit: 2191

Per claims 3 & 15:

-change handler code for one option is defined in different classes with a class inheritance hierarchy and the change handler code from each class is executed when the option value changes.

Nelson: Col. 8, lines 6-7, "each form description is translated into JAVA source code, this can then be compiled into JAVA class files (code defined in classes with class inheritance hierarchy, inherently when using JAVA programming language) Col. 3, lines 25-37 disclose a dynamic form software engine that retrieves an FDL file for the corresponding configuration form. The FDL file determines the layout type. Appearance (col. 3, lines 40-45) is determined by a policy set in the forms engine and also determines the type of widget presented. Col. 3, lines 45-51, "When new configuration forms are needed, or old configuration forms needed to be revised, only new FDL files need to be released and added to existing applications...to change the style of a configuration form, the policy of the form engine only needs to be changed (execute change handler code)." FDL files are registered with the form engine (col. 5, line 3) and added to an internal catalogue (col. 5, line 9). Col. 6, lines 51-58, "easy to add new types of widgets (options) and forms...new types of DataCollection...new types of data bases storing data in a different form or new protocols for conveying the data..." Col. 7, lines 46-53, "First it becomes very easy to upgrade the application to include new forms to support new hardware devices. New FDL files are copied into the applications run-time directory...configuration forms for new modules can be added while the application is running." The forms engine handles 'change handler code' for changing option values.

Art Unit: 2191

Per claims 4 & 16:

-wherein the option data structure includes a default value...

-in a get operation to an instance of the class, if an option value which applies to the instances has been set, getting the set option value and, if no value which applies has been set, getting the default value for the class.

Nelson: Col. 5, lines 10-23, "The form engine 10, or FDL files 13 can contain rule descriptions which also control values of individual items of the data....include limiting the maximum and minimum values (default values)...and also adjusting the valued of a second item, based on a new value of a first item (default values). Additional discussion related to get() and set() operations is found at col. 5, lines 15-23 and FIGs. 3A & 3B. Col. 5, lines 27-33, "The form construction process includes the selection of widgets, the binding of each widget to a data source (default value or set value)...and the construction of rule objects that respond to the users interaction (user setting a value) with the form and validate the users input."

Per Claims 5 & 17:

-defining a first class with a first option data structure of a first form which supports, in instances of the class, references to option values without allocation of memory space for the full option values when the instance is created;

See rejection of limitations in claim 1 above. Col. 5, line 25, "The form engine finds the entry for the form in the catalogue, constructs the form using the information from the specification

Art Unit: 2191

objects, and displays...” Memory is not allocated for forms in the catalogue that are not used for a particular request / display.

-defining a second class with a second option data structure of a second form which supports, in instances of the second class, references to option values without allocation of memory space for the full option values when the instance is created, the second form being different from the first form;

As an example, a different form may be chosen from the catalogue to define a second class with a second option data structure of a second form.

-during compilation, encoding an option operation as a method call to an object of the first class and to an object of the second class without regard to the form of the option data structure supported by the class.

Nelson disclosed (col. 3, lines 17-24) “a form description language (FDL) for describing basic elements of a configuration file...includes a description of the data which is presented and is modifiable by the form...the FDL file can also contain a basic layout type for the data.” Col. 3, lines 38-51, “Variations in the appearance of a configuration form, such as size, spacing and type of components is determined by a policy set in the forms engine...certain types of data will always have a certain type of widget presenting and modifying the data...When new configuration forms are needed (defining a second class with a second option data structure)...only new FDL files need to be released and added to existing applications...when it

Art Unit: 2191

is desired to change the style of a configuration form, the policy of the form engine only needs to be changed...”

Nelson allowed for multiple configuration forms (first, second), using appropriate FDL files. Col. 4, lines 22-39, “Inside the application 9 are a plurality of FDL files 13. These contain a description of the different types of data 7 in the form, and more specifically includes specification for obtaining the data 7, i.e., descriptions of MIB (Col. 1, line 45 / Management Information Base)...The FDL files 13 while part of the application 9, are separately insertable and removable into and out of the application 9. When the application 9 desires to resent a dynamic form 1, it sends a form type request 15 and a data location request 17 to the form engine 19. The form engine then reads the FDL file 13 corresponding to the form type 15. The form engine 19 then creates the different types of DataCollections 21 for the appropriate data described in the corresponding FDL file 13.”

Col. 4, lines 40-49, “The form engine 19 has a separate data collection portion 21 for each type of device and connection convention...In this way each form does not need to have its own code for retrieving and modifying data (without regard to the form of the option data structure supported by the class) in each device (option operation as a method call to an object of the first class and to an object of the second class).”

More explicitly, Badavas disclosed (col. 4:37-43), PCOs (Process Control Objects), with mandatory parts for which memory space is allocated at the time of object creation (or instantiation) and with optional parts for which memory space is allocated only as needed (supports an option data structure, without allocation of memory space for the full option values

Art Unit: 2191

when the instance is created). The optional parts can be added subsequent to creation, typically, for example, during configuration.

Therefore, it would have been obvious, to one of ordinary skill in the art, to modify Nelson, using the teachings of Badavas, because Badavas was concerned with (col. 1:15-16) implementing systems with greater flexibility and robustness. Badavas understood that (col. 5:15) this would prevent consuming resources with optional features that would not be used. Likewise, Nelson recognized that his invention makes it (col.3: 1-15) easy to upgrade the application to include new forms to support updated, new versions (flexibility and robustness). One of ordinary skill would be motivated to provide a flexible system that conserved memory resources.

Per claims 6 & 18:

-notifying objects of a change in an option value through a change handler identified by an option binding, the option binding being located by first searching a mapping data structure for a previously computed mapping to the option binding and, if no mapping was previously computed, by then computing the mapping to the option binding and storing the mapping in the mapping data structure.

As an example, see FIGs. 3A & 3B. The objects have values bound to the option values. A change handler, in this example, has changed the State, #25 & the Redundant port, #29. The previously computed mapping for state was 'enabled.' The computed / stored mapping was changed to 'redundant-primary.'

Art Unit: 2191

Per claims 7, 19, and 27:

-the option data structure comprises a linked list of option items having option values.

Nelson: Col. 5, lines 56-62, "The Dynamic Forms engine constructs the form using the factories and specification in the catalogue...The factories create the elements of the form...The factories layout all the elements in the form based on the Dynamic Forms Engine's layout policy. Col. 6, lines 19-20, "...software package containing C++software classes for Lists, Strings, and other generic tools that are used. Col. 7, lines 17-24, "The design of dynamic forms isolates the object creation functions within 'factory' objects using the abstract factory pattern description as described on page 87 in the reference, Design Patterns Elements of Reusable Object Oriented Software', by Erich Gamma, Richard Helm, Ralph Johnson, and John Vlissides..." The Dynamic Forms engine uses factories and the specification in the catalogue. The catalogue contains option items. Data sources fill the values.

Per Claims 8 & 20:

-a nonlocal option value applies to other objects in a nonlocal option hierarchy.

Nelson disclosed a global description (non local option hierarchy) of layout at col. 3, lines 17-18: "a form description language (FDL) for describing basic elements of a configuration file." Col. 3, lines 29-37, "The form engine retrieves the FDL file for the corresponding configuration form. The form engine reads the respective FDL file, and parses the data described by the respective DFL file. The form engine then creates the secondary window in the application with a layout in accordance with the layout type

Art Unit: 2191

Per Claims 9 & 21:

-the nonlocal option hierarchy is a graphical hierarchy.

Nelson disclosed a graphical programming application. Col. 4, lines 19-20, "The widgets 5 display data 7, and this data can be changed by the operator of the application, usually through the widget." Col. 4, lines 63-66, "The policy portion 23, of the form engine 19, "arranges the data according to any layout information in the FDL file 13, and adds additional appearance and style features to create the final appearance of the dynamic form 1." Col. 6, lines 1-25 describe an object oriented type of environment, which inherently is a hierarchical arrangement. A nonlocal (global) option hierarchy (col. 5, lines 2-9) is provided by registered FDL files ...and are added to the internal catalogue (nonlocal option hierarchy) of compiled form descriptions." Col. 5, lines 47-49, "The application using dynamic forms registers the FDL file with the Dynamic Forms Engine ...The Dynamic Forms engine parses the grammar in the FDL file and generates the necessary Factory objects and Form specification classes (hierarchy)." Col. 5, line 64, "The completed form is displayed on the screen (graphical hierarchy)."

Per Claims 10 & 22:

-the class which supports the option data structure includes defined fields to support values in preallocated memory space.

Nelson: Col. 5, lines 55-62, "The Dynamic Forms engine constructs the form using the factories and specifications in the catalogue...The factories create the elements (defined fields to support values in preallocated memory space) of the form."

Art Unit: 2191

Per Claims 11, 12 23, and 24:

- the type description is used to check the declared type of a value to be set in a set operation.
- the type description is used to check the legality of an operation to be performed on a value obtained in a get operation.

Nelson: Col. 5, lines 10-12, "The form engine 19, or FDL files 13 can contain rule descriptions which also control values of individual items of the data." Col. 6, lines 15-16, "All accesses to the data (get / set operations) are handled by the interface to the DataCollection." Col. 6, lines 66-67, "the form engine has the ability to retrieve (get operation), validate and store (set operation) the data." See discussion on "get" and "set" operations at col. 12, line 28 through col. 13, line 37. Col. 12, lines 61-62, The DataCollection contains...DataItems. Col. 13, lines 3-8, "The DataItems maintain all the necessary information for each particular piece of data. DataItems maintain type information...DataItems also contain any constraints..." Col. 13, lines 33-37, "Implicit constraints are part of the basic DataItem types...Each DataItem type has built in rules for its type..." Col. 13, lines 19-22, Constraints are used by the designer of a form to enforce limitations (checks the legality) on the values of items in a form. An error string is specified with each constraint and this string is displayed when a constraint detects an invalid value."

Per claim 29:

- wherein the allocation of memory space occurs when the option value is set.

Art Unit: 2191

Badavas: See FIG. 7 (optional parts). Col. 4: 37-43, “optional parts for which memory space is allocated only as needed. The optional parts can be added subsequent to creation, typically, for example, during configuration. Col. 15:44-46, “An unused optional part has a null reference. The configurator must instantiate an optional part before it can be used or its parameters set.” The configurator sets the option value.

More explicitly, Badavas disclosed (col. 4:37-43), PCOs (Process Control Objects), with mandatory parts for which memory space is allocated at the time of object creation (or instantiation) and with optional parts for which memory space is allocated only as needed (supports an option data structure, without allocation of memory space for the full option values when the instance is created). The optional parts can be added subsequent to creation, typically, for example, during configuration.

Therefore, it would have been obvious, to one of ordinary skill in the art, to modify Nelson, using the teachings of Badavas, because Badavas was concerned with (col. 1:15-16) implementing systems with greater flexibility and robustness. Badavas understood that (col. 5:15) this would prevent consuming resources with optional features that would not be used. Likewise, Nelson recognized that his invention makes it (col.3: 1-15) easy to upgrade the application to include new forms to support updated, new versions (flexibility and robustness). One of ordinary skill would be motivated to provide a flexible system that conserved memory resources.

Art Unit: 2191

Per claim 30:

Nelson failed to explicitly disclose:

-wherein defining the class also supports a data structure having, in instances of the class, references to field values for which memory space is allocated when the instance is created, the data structure including a type description of the field value;

However, Badavas disclosed (col. 15:34-43) input part classes, output part classes and body parts classes, containing or referencing FloatVariable, BoolVariable, or IntVariable signals (references, including type descriptions, to field values for which memory space is allocated).

-compiling an operation on a field value in an instance of the class using the type description in the data structure.

Badavas: Col. 23: 30, 'JAVA code is written and compiled.'

Therefore, it would have been obvious, to one of ordinary skill in the art, to modify Nelson, using the teachings of Badavas, because Badavas was concerned with (col. 1:15-16) implementing systems with greater flexibility and robustness. Badavas understood that (col. 5:15) this would prevent consuming resources with optional features that would not be used. Likewise, Nelson recognized that his invention makes it (col.3: 1-15) easy to upgrade the application to include new forms to support updated, new versions (flexibility and robustness).

Art Unit: 2191

One of ordinary skill would be motivated to provide a flexible system that conserved memory resources.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Note pertinent references:

USPN 6,223,342 B1 to George (1996) A system and method for data processing objects having a number of attributes (Abstract). Col. 2, lines 50-53, "Preferably, the global configuration stream includes a count of attributes of the object, the order of the sequence, and the individual attribute details, such as data types..." Col. 3, lines 12-21, "For an object having three attributes...an object list includes the associated local configuration stream and three smart pointers to memory locations (references to option values) of the values for the three attributes...Within a sequence of object lists, some of the objects will be 'sparse,' i.e. some of the objects will have one or more absent attributes (reference to option values)." Inherently 'compiling an operation on an option value in an instance of the class using the type description' is analogous to George's system and method for data processing objects, having an optional number of attributes.

USPN 6,842,906 B1 to Bowman-Amuah DETX (2794)

Art Unit: 2191

Detailed Description Text - DETX (2794): "Make use of "lazy" or "deferred" loading. That is, don't do a "deep" instantiation until you know you're going to use the associated parts of the object. Instead, load selected sub-objects only when first referenced. This can save on memory overhead as well as DBMS access. In some cases you can use a hybrid strategy: do a "shallow" instantiation by default, but provide the client program with a way to build the complete object on demand to provide more deterministic performance. One thing to be careful of with this approach is that if you really do tend to use most parts of the object during high-volume processing, loading it in piecemeal can actually worsen the performance, because of the overhead of maintaining the load state and because of the smaller DBMS transactions sizes. These techniques have a very small impact on your object model."

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2191

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Steelman, whose telephone number is (571) 272-3704. The examiner can normally be reached Monday through Thursday, from 7:00 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached at (571) 272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Art Unit: 2191

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mary Steelman

12/05/2006

Mary Steelman
Primary Examiner
12.05.2006